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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,779	02/13/2002	Manoharprasad K. Rao	201-0633 FAM	9492

28549 7590 04/21/2005

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ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 04/21/2005

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/683,779
Filing Date: February 13, 2002
Appellant(s): RAO ET AL.

Kevin G.Mierzwa
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/2/05.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(7) Prior Art of Record

6,226,389	Lemelson et al.	5-2001
5,835,007	Kosiak	11-1998
6,085,151	Farmer et al.	7-2000

(8) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3, 5-16, and 18-19, are rejected under 35 U.S.C. 103(a). This rejection is set forth in a prior Office Action, mailed on 4/20/04.

Claim 4, is rejected under 35 U.S.C. 103(a). This rejection is set forth in a prior Office Action, mailed on 4/20/04.

Claims 17, and 20, are rejected under 35 U.S.C. 103(a). This rejection is set forth in a prior Office Action, mailed on 4/20/04.

(9) Response to Argument

The rejection of claims 1-3, 5-16, and 18-19 rely of the prior art of Lemelson et al. (6,226,389). Lemelson et al. disclose a system and method assist the driver of a motor vehicle in preventing accidents or minimizing the effects of the accident.

The appellant argues on page 4 that Lemelson et al. reference does not teach or suggest a decision zone. Lemelson et al. do not explicitly disclose a decision zone. However, Lemelson et al. disclose in column 2, lines 55-58, "When the closing distance becomes hazardous, select vehicle subsystem maybe automatically controlled by the computer;" the notion of an increasing hazardous closing distance is implicit to the notion of a "decision zone," because "a distance between a vehicle and an object" implies an area or a zone in front of the vehicle, and when this distance becomes so close as to be dangerous, a decision is made by a control computer to activate a selected vehicle subsystem to avoid a collision. There are three selected different vehicle subsystem: a first subsystem is to display a warning indication (column 2, lines 59-61); a second subsystem generates a select sound such as horn, buzzing, or speech warning (column 3,

lines 1-5); and a third subsystem is to generate a corrective action such as applying the brakes of the vehicle to cause it to slow down (column 3, lines 10-13). Therefore, "when the closing distance becomes hazardous, selected vehicle subsystem is being activated" implies a decision zone. It would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate a decision zone into the invention of Lemelson et al. to determine a dangerous area between the vehicle and the object, therefore, to activate a warning system immediately and perform a corrective action such as braking or steering to avoid the collision.

Appellant argues in claim 1, "Lemelson et al. does not teach "determining an object within a decision zone from a radar or lidar then confirming the presence of the object within the decision zone using a vision system." Lemelson et al. does scan an object ahead of the vehicle using radar or lidar (column 6, lines 9-13). Lemelson et al. do not explicitly disclose confirming the presence of the object. However, Lemelson et al. disclose scanning, detecting, and identifying obstacles ahead of the vehicle by using a vision sensor (such as a camera) (column 4, lines 22-27). "Scanning, detecting, and identifying" implies confirming the presence of the object ahead of the vehicle; also, Lemelson et al. disclose identifying obstacles in the path of the vehicle and determine distance on a real time and continuous basis for use in warning the operator in controlling the operation of the vehicle to avoid a collision (column 4, lines 31-35). The notion of warning distance for controlling the operation of the vehicle to avoid a collision is implicit to a decision zone. Therefore, Lemelson et al. implicitly disclose a vision sensor confirming the presence of the object within the decision zone.

Appellant argues in claim 1, "the vision system in Lemelson et al. does not generate an object distance signal and object relative velocity." This argument is incorrect because in

claim 1, "a radar or lidar unit generating an object distance signal and object relative velocity signal," it is not "the vision system generate an object distance signal and object relative velocity." Lemelson et al. does disclose radar or lidar to identify and indicate distance between the vehicle and objects (column 6, lines 10-11), and using radar / lidar sensor to detect relative velocity between the vehicle and objects (column 11, lines 35-46).

Appellant argues in claims 2 and 3, Lemelson et al. do not teach object size as height and object area. However, Lemelson et al. disclose "the size of the identified object" (column 2, lines 48-49). Height is inherent to size. Also, Lemelson et al. disclose the width of the object (column 7, line 39). It is obvious that the object area is determined from object height and width.

Appellant argues in claim 5, Lemelson et al. do not teach the decision zone has a size dependent on the relative velocity signal. Lemelson et al. do not explicitly disclose the decision zone has a size dependent on the relative velocity signal. However, Lemelson et al. disclose as discussed in claim 1 above, "when the closing distance becomes hazardous, selected vehicle subsystem is being activated" which implies a decision zone. Also, Lemelson et al. disclose "to avoid or lessen the effects of an accident, a third vehicle subsystem stops the forward travel of the vehicle in a controlled manner depending on the relative speeds of the two vehicle" (column 3, lines 13-18). Lemelson et al. also disclose there are many levels or size of the relative velocity such as very low, low, medium, high, and very high (column 9, lines 29-31). Lemelson et al. further disclose depending on the size of the relative velocity and size of the relative distance (very close, close, medium, far, or very far, column 9, lines 21-23), the decision of the danger is being determined, and the warning level is indicated (column 10, lines 3-26). Therefore, Lemelson et al. directly implies "the decision zone has a size dependent on the relative velocity

signal." It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Lemelson et al. by combining the decision zone, which has a size dependent on the relative velocity signal to determine a danger level when the vehicle approaching close to the obstacle, for the purpose of activating an appropriate safety device to avoid the collision.

Appellant argues in claim 9, Lemelson et al. do not teach object orientation, and determines an object orientation in response to the object distance, object size, and object type. Claim 9 does not claim "object type;" the correct claim is object height. Lemelson et al. do not explicitly disclose object orientation. However, Lemelson et al. disclose object distance (column 7, lines 31-32), relative velocities, and accelerations (column 11, lines 35-39), direction of travel and speed of object (column 2, lines 34-35). Therefore, distance, velocity, direction of travel and speed of object determine object orientation.

Appellant argues in claims 11-12, Lemelson et al. do not teach "determining object size comprises determining object height and that activating a countermeasure is performed in response to the object type". This argument is not correct because claim 11 does not claim "object type." Lemelson et al. disclose the size of the identified object (column 2, line 48), also using the relative shape and size of the object, the indication of when the closing distance becomes hazardous, and a vehicle subsystem is activated (column 2, lines 44-58). Height is inherent to size. Therefore, Lemelson et al. implicitly disclose determining object size comprises determining object height and that activating a countermeasure is performed in response to the object height in claim 11. Also, Lemelson et al. disclose the width of the object (column 7, line 39). It is obvious that the object cross sectional area is determined from object height and width.

Therefore, Lemelson et al. also implies determining an object cross sectional area and the countermeasure is activated in response to the object cross sectional area in claim 12.

The applellant's argument on claims 13-17, and 20 is the same as all of the claims above. Therefore, the response is similar as above.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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April 17, 2005

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